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09408839ZA

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CD(s) containing:

computer program listing

Doc Code: Computer

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Artifact Type Code: P

pages of specification

and/or sequence listing

and/or table

Doc Code: Artifact

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Artifact Type Code: S

content unspecified or combined

Doc Code: Artifact

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Artifact Type Code: U

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Stapled Set(s) Color Documents or B/W Photographs

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Microfilm(s)

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Artifact Type Code: F

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Video tape(s)

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Other, description: United States Patent US005905460A

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The
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The Commissioner of
Patents and Trademarks

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extension.

J. Todd Pichini

Acting Commissioner of Patents and Trademarks

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NOTICE

If the application for this patent was filed on or after December 12, 1980, maintenance fees are due three years and six months, seven years and six months, and eleven years and six months after the date of this grant, or within a grace period of six months thereafter upon payment of a surcharge as provided by law. The amount, number and timing of the maintenance fees required may be changed by law or regulation. Unless payment of the applicable maintenance fee is received in the Patent and Trademark Office on or before the date the fee is due or within a grace period of six months thereafter, the patent will expire as of the end of such grace period.

United States Patent [19]

Odagiri et al.



US005905460A

[11] Patent Number: 5,905,460
[45] Date of Patent: May 18, 1999

[54] WRIST WATCH TYPE GPS RECEIVER

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[21] Appl. No.: 08/918,200

[22] Filed: Aug. 25, 1997

[51] Int. Cl.⁶ G01S 5/02

[52] U.S. Cl. 342/357; 701/213

[58] Field of Search 342/357, 352;
701/213

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U.S. PATENT DOCUMENTS

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ABSTRACT

The system includes an antenna posture detecting device for detecting an antenna posture condition where it is apparently impossible to receive the wave, and a received signal operation controlling device for temporarily interrupting the wave receiving operation, in the case where it is impossible for the antenna to receive the wave, until the wave receiving operation is again possible. The system may include a body movement detecting device for detecting an action of the user; an action judgement device for judging the action of the user on the basis of an output signal of the body movement detecting device; a signal receiving operation controlling device for controlling a signal receiving operation of the GPS receiving device from the judgement result of the action judgement device; a moving distance calculating device for calculating a moving distance of the user on the basis of an output signal of the body movement detecting device during a period of time when the GPS signal receiving operation is interrupted; and an alarm device for receiving a wave of a GPS receiving antenna on the basis of an output signal of the moving distance calculating device and for giving an alarm to the user for a position where it is easy for the GPS receiving antenna to receive the wave.

17 Claims, 10 Drawing Sheets

